

## Claims

1. An aerostatic suspension system for rolling equipment and vehicles comprising a cylinder-piston set, being said piston (8) linked to the suspended structure of the equipment or vehicle by means of an articulation that allows  
5 pivoting in two co-planar horizontal axes, where cylinder (7), which possesses one degree of freedom along the vertical axis, is connected to a lever (3) with an adjustable point of application of force (6), being the distal end of said lever articulated with the higher end of a wheel support rod of vehicle or equipment support.
- 10 2. An aerostatic suspension system according to claim 1, wherein the piston and the cylinder are constructed out of the same material.
3. An aerostatic suspension system according to claim 1, wherein said piston is provided with seals.
4. An aerostatic suspension system according to claim 3, wherein at least one of  
15 the seals is an elastomeric o'ring.
5. An aerostatic suspension system according to claim 3, wherein at least one of the seals comprises a ferrofluidic seal, by itself or in combination with elastomeric o'ring seals.
6. An aerostatic suspension system according to claim 1 wherein said piston (8)  
20 is linked to the suspended structure of the equipment or vehicle by means of an articulated joint that pivots on two co-planar horizontal transversal axes.

7. An aerostatic suspension system according to claim 1, wherein said piston (8) is linked to the suspended structure of the equipment or vehicle by means of a cardanic joint (16).
8. An aerostatic suspension system according to claim 1, wherein said adjustable point of application mechanism (6) comprises a frame (23) with rollers (24) which allow displacement of said frame along a track (25), wherein said frame (23) also holds a position-adjustment threaded spindle (26), and on the lower end of said frame is mounted the support roller (21), being the point of application of force of lever (3) on roller (21) co-linear with the turning axis of the mounting rollers for supporting rocker arm of roller (21) so as to ensure its invariability irrespective of angular change of application of force, thus ensuring that lever arm ratio (3-A and 3-B) does not change as the leverage angle changes, and as lever (3) inclination changes, the total effective length increase does not represent a change in the lever arm ratio, given that both increase in the same proportion.